HyspIRI and Surface Biology and Geology Science and Applications Workshop
Dates: 15-17 August 2018
Location: Carnegie Institution for Science, Auditorium
1530 P Street NW Washington, DC 20005

Wed	**Title**	**Speaker**
7:30	Registration	
8:50	Welcome from Carnegie	Greg Asner
9:00	HyspIRI 2007 Guidance and Science Study Group	Woody Turner/Ben Phillips
9:10	Research Perspectives on HyspIRI and Prospects Looking Forward	Jack Kaye
9:30	Questions	
9:40	Break	
10:00	HyspIRI VSWIR/TIR/Combined Science Questions	Rob Green/Simon Hook/Betsy Middleton
10:40	Real-Time Data Products and the IPM	Dan Mandl
11:00	HyspIRI Concept Level 1 Requirements	Rob Green/Simon Hook
11:20	HyspIRI Data Products	Betsy Middleton
11:40	Lunch and Posters	
13:20	HyspIRI Mission Concept VSWIR and TIR Separate and Contemporaneous	Ernesto Diaz
13:40	VSWIR L1, L2 Algorithm Maturity and Cal/Val	David Thompson
14:00	TIR L1, L2 Algorithm Maturity and Cal/Val	Glynn Hulley
14:20	HyspIRI Airborne Campaigns, Science, Applications and Lessons	Ian McCubbin
14:40	Break	
15:00	Earth Venture: ECOSTRESS	Simon Hook
15:20	Earth Venture: Coral Reef Airborne Laboratory (CORAL)	Eric Hochberg
15:40	Earth Venture: Earth Surface Mineral Dust Source Investigation (EMIT)	Rob Green
16:00	HyspIRI Applications Questions and Traceability Matrix	Jeff Luvall
16:20	Applied Sciences: From HyspIRI to SBG	Lawrence Friedl
16:40	**Discussion, HyspIRI Wrap Up and Plans for Final Report**	Steering Committee
17:00	**Discussion, HyspIRI Wrap Up and Plans for Final Report**	Steering Committee
17:20	Adjourn	

Thu		
	Registration	
8:30	Proceeding with the 2017 Decadal Survey	Michael Freilich
8:50	Questions	
9:00	The Science Mission(s) of SBG: Challenge and Opportunity	David Schimel
9:20	Tropical Forest Biodiversity from Imaging Spectroscopy	Greg Asner
9:40	Global Science Requirements for Space based Retrievals of Evapotranspiration	Joshua Fisher
10:00	Break	
10:20	Foliar Traits from Imaging Spectroscopy: How We Get There and What Foliar Traits Tell Us	Phil Townsend
10:40	AVIRIS-NG Estimates of Biodiversity from a Biodiversity Hotspot in the Western Ghats Mountains of Southwest India	Susan Ustin
11:00	Satellite Optical Remote Sensing of Ecosystem Functional Diversity and Productivity	Fred Huemmrich
11:20	Mapping Plant Diversity from Space and Using it to Inform Ecosystem Models	Fabian Schneider
11:40	The EO-1 Hyperion globally distributed spectral time series: tracing the seasonal changes in vegetation function and productivity	Petya Campbell
12:00	Lunch and Posters	

13:40	Next Generation of Physically-Based Cryosphere-Hydrosphere-Climate Modeling Constrained by VSWIR Imaging Spectroscopy of Snow Properties	Tom Painter
14:00	Interpretation and Retrieval of Snow Properties from Imaging Spectroscopy, and Its Role in Future Earth Observing Satellites	Jeff Dozier
14:20	Break	
14:40	Combined VSWIR-TIR Analysis of Vegetation in Natural, Urban and Agricultural Settings from the HyspIRI Airborne Campaign	Dar Roberts
15:00	Opportunities and Challenges for SBG in the Arctic-Boreal Region	Charles Miller
15:20	How Observing Surface Biology and Geology Will Allow Us to Answer Critical Questions About the Physical Causes, and Societal Consequences, of Global Volcanic Eruptions	Rob Wright
15:40	The Application of SBG Observations to Monitor Volcanic Gas Emissions and Aerosol Plumes: HyspIRI Airborne Campaign Example	Vincent Realmuto
16:00	Intrinsic Dimensionality in Combined Visible to Thermal Infrared Imagery, Insight into the Information Richness of the SBG Observable	Kerry Cawse-Nicholson
16:20	Global Science and Applications of SBG Observables for the Solid Earth	Mike Ramsey
16:40	**Observables, Research and Applications Questions, and Requirements Discussion**	Steering Committee
17:00	**Observables, Research and Applications Questions, and Requirements Discussion**	Steering Committee
17:20	Adjourn	

Fri

8:00	The Potential of High-Fidelity Spatial, Spectral, Temporal, and Radiometric Sensors to Advance Aquatic Remote Sensing Beyond Chlorophyll	Raphe Kudela
8:20	Closing the Gap from Oceans to Land: the Role of SBG in Monitoring Near-Coastal Aquatic Ecosystems	Erin Hestir
8:40	Scaling CORAL Results with Future SBG Observables	Eric Hochberg
9:00	Aquatic Community Objectives and Priorities for SBG Global Science and Applications	Kevin Turpie
9:20	Wildfire Applications of Imaging Spectroscopy	Phil Dennison
9:40	Break	
10:00	Geophysical Variables to Advance Biogeochemistry, Ecology, and Biodiversity	Compton J. Tucker
10:20	Fire Applications in Relation to Anthropogenic Modification of the Land (H-4), Changes in Carbon Sinks (E-5), and Atmospheric Pollutants (C-8)	Natasha Stavros
10:40	Applications of Hyperspectral Remote Sensing Observations of Geological Hazards	Florian Schwander
11:00	Remote Sensing of Urban Heat Islands and Waves: Detection, Trends, and Societal Vulnerability	Glynn Hulley
11:20	Detecting Methane and Carbon Dioxide Point Source Emissions with SBG-Type Observables	Andrew Thorpe
11:40	Future SBG Observables - Supporting Applications for Societal Benefits	Jeff Luvall
12:00	Lunch and Posters	
13:40	Overview of the EnMAP Imaging Spectroscopy Mission	Luis Gaunter
14:00	The Copernicus Hyperspectral Imaging Mission for the Environment (CHIME) Concept, Status, and Related Activities	Michael Rast
14:20	HISUI Status Towards FY2019 Launch and Collaboration with Other Missions	Tsuneo Matsunaga
14:40	Break	
15:00	Mapping Geology and Hazards with Imaging Spectroscopy	Gregg Swayze
15:20	Verification, Validation, and Uncertainty Quantification	David Thompson
15:40	**Observables, Research and Applications Questions, and Requirements Discussion**	Steering Committee
16:00	**Observables, Research and Applications Questions, and Requirements Discussion**	Steering Committee

16:20	**Summary Draft SBG Concept Requirements, Next Steps**	Steering Committee
16:40	Adjourn	

	POSTERS	**Lead**
1	Emissivity Retrievals from Active Lava Surfaces: Results from the NASA Hawaii Airborne Campaigns	James Thompson
2	Relative Age Dating of Hawaiian Lava Flows with AVIRIS and HyTES Hyperspectral Data	Michael Abrams
3	Remote Sensing of Drylands: Applications of Canopy Spectral Invariants	Hamid Dashti
4	Coupled Retrieval of the Three Phases of Water from EnMAP Hyperspectral Measurements	Niklas Bohn
5	Infrared Spectroscopy Quadratic Surface Approximation of Local Ecosystems Contamination from Grand Gulf Nuclear Station Operations in Mississippi	Sam Nwaneri
6	EO-1 Hyperion spectral time series prototyping globally distributed environmental applications	Petya Campbell
7	HyspIRI Hawaii VOLCANO-VEGETATION Campaign Update: Selection of Optima AVIRIS Narrowbands and Vegetation Indices that Detect Vegetation Stress Caused by Soil Degassing CO2 and H2S and Soil Temperature	Isabella Mariotto
8	Cross-Calibration of Medium Resolution Earth Observing Satellites by Using EO-1 Hyperion-Derived Spectral Surface Reflectance from Lunar Cal Sites	Stephen Ungar
9	Utilizing Spectral Imagery to Examine High Latitude Ecosystem Function and Diversity	Fred Huemmrich
10	Advanced Model Inversion Approach Used to Describe High Latitude Ecosystem Response to Climate Change	Qingyuan Zhang
11	Hyperspectral and Polarimetric Fire Emission Characterization from the NASA ER-2 Aircraft	Olga Kalashnikova
12	Band Parameters for Mineral Mapping: Southern California Case Study	Wendy Calvin
13	Potential Applications of a Principal Component-based Radiative Transfer Model (PCRTM) for HYSPIRI	Xu Liu
14	Mapping Functional Diversity from Remotely Sensed Plant Functional Traits	Fabian Schneider
15	Underwater Photomosaics for Validation of Remotely Sensed Shallow Seafloor Community Maps	Stacy Peltier
16	How Can Functional Diversity Improve Terrestrial Carbon-Cycle Predictions? A Multi-Biome Perspective	Benjamin Poulter
17	Mapping Methane Plumes in AVIRIS-NG India Campaign Data	Phil Dennison
18	A Window In to the Future of the Earth, Hidden in the Jungles of Costa Rica's Volcanoes	Joshua Fisher
19	Long-Term Effects of Elevated Volcanic CO2 on Forest Ecosystems at Mammoth Mountain	Kerry Cawse-Nicholson
20	Persistently Elevated Volcanic CO2 on Tropical Volcanoes	Florian Schwander
21	Using Paired Thermal and Hyperspectral Imagery to Quantify Land Surface Temperature Variability and assess crop stress within California orchards	Dar Roberts
22	Land Surface Temperature and evapotranspiration Applications for ECOSTRESS and Beyond	Savannah Cooley
23	Spatial and Temporal Patterns of Inherent Optical Properties in Western Lake Erie for 2015 and 2016 with Implications for Satellite Remote Sensing	Nancy French
24	Effects of Surface Roughness and Topography on Snow Properties-Albedo Retrieval	Charles Gatebe

25	Aquatic weed detection to support fish and water resources management - an imaging spectroscopy story to guide future SBG aquatic applications	Christiana Ade
26	Mapping hydrothermal alteration minerals using high-resolution AVIRIS-NG hyperspectral data in Hutti-Maski Gold deposit area, India	Thomas Oommen
27	Spatial/Spectral Resolution and Signal-to-Noise Ratio Considerations for Coastal Water Remote Sensing	Wes Moses
28	Quality evaluation and validation of the AVIRIS and PRISM hyperspectral remote sensing reflectance in optically shallow environments	Jianwei Wei
29	Development of A Floating Vegetation Index (FVI) Using three Narrow Bands in the 1.0 to 1.25 micron Spectral Range	Bo-Cai Gao
30	Using Simulated Imaging Spectrometer Data to Identify the Practical Limits of Discrimination of Coral Reef Benthic Composition	Kyle Cavanaugh
31	The DLR Earth Sensing Imaging spectrometer - Status and Data Specifications	Mary Pagnutti
32	Seeing plant stress from the sky: Integration of a terrestrial biosphere model with thermal remote sensing	Miriam Johnston
33	Improving Hazard Assessment and Aviation Safety: A PACE - HyspIRI Synergistic Mission Application	Ali Omar
34	Rice Phenology and Imaging Spectroscopy	Dan Sousa